STEVEN L. BESHEAR
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ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT KENTUCKY 40601
www.kentucky.gov

December 20, 2010

Northern KY Sanitation District No. 1
Attn: Jeffry Eger, Executive Director
1045 Eaton Dr
Ft. Wright, KY 41017

RE: Northern KY Sanitation District No. 1
AI # 2449
Ash Street Pump Station

Dear Mr. Eger:

Thank you for submitting a Green Project Reserve (GPR) business case for your proposed project, funded through the Clean Water State Revolving Fund (CWSRF). A provision of the 2011, CWSRF funding cycle requires that to the extent there are eligible project applications; states shall use 20% of its Clean Water State Revolving Fund capitalization grant for green infrastructure projects. These projects are intended to address water and energy efficiency improvements or other environmentally innovative activities. The Kentucky Division of Water (KY DOW) has reviewed the GPR business case for the Ash Street Force Main and Collectors project, and has found the justification to be acceptable. If the scope of the project is altered in any way to exclude the GPR eligible components, the Northern KY Sanitation District No. 1 shall submit the changes in writing to the KY DOW and receive prior approval in writing before proceeding with construction.

We look forward to working with you in finalizing your wastewater infrastructure project. If you have any questions regarding this correspondence, please contact me at (502) 564-3410, ext 4832.

Sincerely,

Greg Goode, P.E.
Kentucky Division of Water

Cc: Jim Turner, SD1
CWSRF File

KIA/SRF Green Project Reserve
Business Case for Ash Street Pump Station
Sanitation District No. 1
December 3, 2010

Energy Efficiency

High Efficiency Pumps, HVAC and Electrical Equipment: $1,200,000

The efficiency of a motor is directly related to the power consumption. An increase in the efficiency results in a decrease in electrical costs. For example, a 20 HP motor that is 80% efficient and operates 8 hours per day uses 149.2 kW-hrs of electricity, while a 90% efficient motor uses 132.6 kW-hrs, a savings of 11%. The advantage of High Efficiency motors is extremely evident when large horsepower motors are required. The submersible pumps for this project will be approximately 160 HP and 93% efficient. Other equipment, while smaller, will be of similar efficiency.

Heat Recovery Unit $50,000

The winter design conditions are 0 F outside and 55 F inside the odor control room. The odor control room requires 6 air changes per hour (ACH). During the heating season the total load is approx 275,300 Btu/Hr without an energy recovery unit. The load drops to 139,250 Btu/Hr utilizing an energy recovery unit resulting in an estimated energy savings of 136,050 Btu/Hr per heating season or approximately 49% drop in energy usage.

High Efficiency insulation and building materials $100,000

By increasing the roof/ceiling insulation from R-30 to R-38 and increasing the wall insulation from R-6 to R-21 estimated energy savings is 10,900 Btu/Hr per season or approximately 8% of the total energy usage.

Green Infrastructure

Permeable pavement, bioretention areas and rain garden: $194,000

The driveway and parking areas will be constructed with a permeable pavement system to prevent stormwater runoff. Retention areas will be constructed using rain garden designs with native grasses and plants to store the discharge from roof downspouts. Both of these designs allow for infiltration of the stormwater back to the aquifer or to other natural drainage paths, and will prevent any increase in wet weather flows from the project site.

TOTAL GREEN COMPONENTS: $1,544,000